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ABSTRACT

This paper examines the present conditions of gifted education, both nationally and in Ohio. It offers an historical perspective including a 200 year timeline of milestones in the areas of gifted education programs, legal authority, personnel preparation, public awareness, and testing and identification. Federal and Ohio State support of gifted education is reviewed. Expectations of gifted education to meet economic needs as well as social and educational values are discussed in the context of current educational reform efforts. Ohio's development of a strategic plan for gifted education in the 21st century is described including reorganization of school districts, service to underserved gifted students (e.g., underachieving children, culturally different students, and gifted females), and increasing development of acceleration options. Research findings on acceleration are briefly reviewed. Suggestions address Ohio policy initiatives in the areas of educational programs, legislation, personnel preparation, public awareness, and testing and identification. (41 references) (DB)

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The Shadow of the Future: Serving Ohio's Gifted Students

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Introduction

In this chapter, the present conditions of gifted education, both nationally and in Ohio, are related to the history of the gifted education movement. Ohio already has a range of comprehensive programs for its gifted and talented students. However, these programs are uneven across the state. Specific suggestions are proposed in this chapter to further improve Ohio's programs. These actions need to be taken to better meet the needs of both its gifted and talented populations and to meet the economic needs of its citizens.

Ohio's future economic conditions are related to the quality of its schools and, in particular, to the state's investment in its gifted and talented students. The extent of this investment will shape the economic lives of Ohioans in the next century.

The Shadow of the Future

Any discussion of gifted education must recognize the context in which public education exists. What is that context?

In a democracy, public education reflects its citizens' values, desires, and societal priorities. Although there may be some lag time between what the public wants and what it gets, the collective's wishes are eventually met. Presently, it appears that the majority in our country want a better life for their children but are reluctant to make the sacrifices that are related to hard work and the foregoing of immediate pleasures.

Teachers who care about all students and the society in which they will live have a moral obligation to teach the importance of human and material investments and to deemphasize wasteful consumption. Investments in brainpower create wealth and jobs and improve the nation's human and material resources. Overconsumption neglects human abilities and fritters away precious time. An emphasis on wasteful consumption of time can be seen in our overwhelming interest in entertainment. Diversions are the driving force behind superficial thinking and rejection of learning. As Postman (1985) noted, we are "amusing ourselves to death."

Neglecting our brightest students is wasteful because squandering our human and material resources results in a lower quality of life, both materially and culturally. Felix Rohatyn, author of *The Twenty-first Century* and chairman of the Municipal Assistance Corporation of New York City, vividly described in economic terms the results of our educational failures. "By the year 2000, Germany and Japan will certainly qualify as superpowers so far as both industrial and financial strength are concerned. The United States, if we continue on our present path, may qualify only as a military superpower" (Rohatyn, 1991, p. 8).

And what is our present education path? It is a failure to invest in knowledge (Rohatyn, 1991). For example, in the last 25 years, there has been a 40% decline in the proportion of students scoring over 600 on the Scholastic Aptitude Test. This fact reflects "the other crisis" in education (Singal, 1991).

Knowledge investment begins with a heavy emphasis on those students who are potentially most likely to be educationally successful. In order to

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make the necessary investment in potentially able students, elected officials and policy makers need the advice of education professionals who know how to locate able students at an early age; who can create effective instruction for this target group; and who can deliver that instruction in a cost-effective, efficient manner. Most importantly, educators have direct access to students and their parents.

Historical Perspective

In our nation's educational history, there have been several periods in which we attended to our able students. These were relatively short periods, but they were times in which educators did not always fully possess the instructional technology needed to achieve their goals. Even without the focused attention to gifted education, development of the conditions necessary for gifted education has been continual. This development can be seen in the testing and identification streams in Figure 1, in the ongoing development of educational programs, in the legal authorization of programs, in personnel preparation, and in the garnering of political support through public awareness.

Figure 1 shows the historical context of gifted education and how it evolved in Ohio and in the country. This history reflects two pervasive assumptions: (1) that the primary source of human ability is genetic and (2) that this ability can be measured precisely with aptitude tests. These two assumptions not only set the parameters for the types of youngsters who were identified as "gifted" but also helped determine the nature of the educational programs in which they were to be served.

In 1925, Lewis Terman published the first of his five-volume study titled *Genetic Studies of Genius.* Terman and his associates followed over 1,000 gifted California students throughout their school years and through mid-life. Because of the impact of the longitudinal study, Terman's influence permeated most of the thinking in the United States about giftedness well into the 1960s. The Terman study diminished some of the stereotypes about gifted students, such as limited physical capacities, early burnout, and social ineptness.

Earlier in this century, when child developmental theories were widely held, there was a consistent framework for gifted education. This framework was based, in part, on the now largely dismissed notion of fixed intelligence and the unfolding of physical attributes (Fancher, 1985). These beliefs were also major forces in the extensive development of tests and identification. Today, few argue that the *potential* for high ability is not inherited. Rather, the disagreements are about the sources of the inheritance, biological or environmental, and the proportions of each (Plomin, 1989; Husen & Tuijnman, 1991).

By casting "giftedness" solely in terms of genetically inherited abilities, early 20th Century advocates unwittingly created a barrier of opposition toward special attention for able students among many public school educators and citizens. Charges of elitism resonate to this day among legislators, policy makers, school administrators, and the general public. Some would argue that because these abilities are genetically driven, there is little need for special attention; gifted students will achieve irrespective of the quality of education.

In 1967, Guilford's *Structure of Intellect* changed forever the nature-nurture arguments. Building on L.L. Thurstone's concept of primary mental abilities, Guilford identified 120 separate categories of intellect. Furthermore, he suggested a scientific basis for teaching to these abilities. His

Figure 1
Historical Context of Gifted Education in the United States and Ohio

Educational Programs	1882 — G. Stanley Hall established psychology laboratory at Johns Hopkins and laid the foundation for child development as the basis for school curriculum.	1911 — National survey found that 6% of cities had special classes for gifted students.	1922 — Cleveland started the Major Work Program, the earliest continuous program for the gifted in the nation. Dorothy Norris was the first teacher and later was the program director.
	1926 — Teaching machine and programmed instruction prototype were developed by Sidney Pressey at The *Ohio* State University.	1951 — Dorothy Norris chaired *Ohio's* statewide committee on gifted education.	1951 — State survey showed that 2% of *Ohio's* schools had special classes and 9% had enrichment programs.
	1959 — Sixteen percent of *Ohio's* schools had programs for the gifted.	1960 — State survey showed 2% of all students in *Ohio's* public schools were gifted.	1960 — *Ohio's* first state-level supervisor of gifted was employed.
	1976 — The *Ohio* State University hosted a week-long school for gifted high school juniors to celebrate the Bicentennial Year.	1977 — The *Ohio* State University hosted the annual Martin W. Essex School for gifted high school juniors. Sixty students from the state attended.	1986 — *Ohio* began the annual Summer Institute for gifted high school students on university campuses throughout the state.
Legal Authority	1791 — Tenth Amendment to the U.S. Constitution reserved education to the states.	1840 — Rhode Island was the first state to enact a compulsory attendance law.	1918 — Compulsory attendance was required in all states.
	1959 — *Ohio* amended law to provide for state leadership for academically gifted children.	1963 — *Ohio* Department of Education's position of supervisor of programs for the gifted was eliminated due to state budget reductions.	1967 — *Ohio* laws permitted funding experimental programs for academically gifted students.
	1967 — *Ohio* authorized early admissions to school for kindergarten and first grade students.	1975 — After a 12-year hiatus, the *Ohio* Department of Education employed a supervisor of gifted programs.	1987 — *Ohio* enacted legislation mandating the identification of all gifted children.
	1988 — The Jacob K. Javits Gifted and Talented Students Education Act authorized the U.S. Department of Education to provide funds to encourage research, demonstrations, and personnel training.		

Figure 1 (cont.)

Personnel Preparation	1920 — The National Society for the Study of Education published the first of three yearbooks about educating the gifted. Other yearbooks were published in 1924 and 1979.	1922 — At Teacher's College, Columbia, Leta Hollingsworth taught the first college course devoted solely to teaching gifted children.	1924 — Louise Stedman published the first textbook on teaching gifted students, *Education of Gifted Children.*
	1926 — Leta Hollingsworth published *Gifted Children: Their Nature and Nurture.*	1942 — Leta Hollingsworth published *Children Above 180 IQ: Origin and Development.*	1951 — The first institute for research on exceptional children was opened at the University of Illinois with Samuel Kirk as director.
	1951 — Paul Witty edited *The Gifted Child,* a widely used textbook in personnel preparation.		
Public Awareness	1785 — Thomas Jefferson addressed the question of racial differences in intelligence.	1867 — Congress established the national Department of Education.	1922 — The Council for Exceptional Children was formed.
	1930 — Lewis M. Terman served as chairman of the subcommittee on the gifted of the White House Conference on Child Health and Protection.	1931 — The U.S. Office of Education formed a section on exceptional children.	1941 — The National Society for the Study of Education issued a yearbook on the education of exceptional children.
	1946 — The American Association for the Gifted was formed by Pauline Brooks Williamson and Ruth Strong.	1950s — Reemergence of hereditarians believed that intelligence was innate.	1957 — The Soviet Union launched Sputnik.
Testing and Identification	1890 — James McKeen Cattell advocated the standardization of methods and norms of psychological testing.	1905 — E.L. Thorndike devised a standardized test to measure educational achievement.	1905 — The French psychologist, Alfred Binet, created the first widely used intelligence test.
	1905 — Henry H. Goddard translated and published the Binet tests for use in the U.S.	1905 — Charles Spearman, an English psychologist, established the principle of *general intelligence (g).* "All intelligence starts with the g factor."	1910 — Goddard published an American standardization of the Binet Scale.

Figure 1 (cont.)

Testing and Identification (cont.)	1912 — William Stern, a German psychologist, invented the concept of the intelligence quotient (mental age/chronological age).	1915 — Robert Yerkes published a test of intelligence using a point-scale, which later was adopted by David Wechsler.	1915 — S.D. Porteus published a series of motor-intellectual mazes to counter Binet's emphasis on previous learning.
	1916 — Terman standardized the American version of Binet's intelligence test, the Stanford-Binet, and used the IQ concept.	1917 — U.S. entered World War I; psychologists developed group tests for sorting, assigning, and classifying personnel. The Army Alpha Test for literates and the Army Beta Test for non-English speaking persons were developed.	1921 — Terman began *Genetic Studies of Genius* and published the results of the longitudinal study in five volumes from 1925 to 1959.
	1923 — The Stanford Achievement Test, an achievement test for grades K-3, was published by Terman and associates.	1928 — Otto Klineberg reported the results of a study that began awareness of the cultural bias of tests.	1939 — Wechsler published the Wechsler Bellevue Scale using the point-scale method and creating the *deviation IQ's.*
	1967 — J.P. Guilford published *Structure of Intellect,* emphasizing creative thinking and teaching intelligence.	1972 — The U.S. Office of Education formulated a definition to identify gifted and talented youth.	1985 — Raymond Fancher published *The Intelligence Men: Makers of IQ Controversy.*

message was clear: Good instruction can improve thinking abilities. Thus, while many gifted educators had long believed that intelligence could be improved, Guilford provided a model for such instruction (Guilford, 1967; Meeker, 1969).

In 1962, the leading authorities in gifted education in Ohio addressed these types of issues (Barbe & Stephens, 1962). All of the contributors to the state publication, *Attention to the Gifted: A Decade Later,* were optimistic that the public and its schools, at long last, had recognized the importance of its able students. Just five years earlier, the Soviet Union had launched Sputnik and our nation was eager to catch up. What better way than to invest in young, able minds? Most people agreed that our future as a world power required that we find and use brainpower.

Federal Support

Many advocates saw the politics of the times as an opportunity to create a national force for gifted education. But by the mid-1960s, political attention shifted to the underclasses, those who were economically and educationally disenfranchised. Other events that drained the nation's resources, such as

the Vietnam War, soon overtook the budding gifted education movement. Our nation seemed incapable of maintaining multiple initiatives. Still, in 1970, the U.S. Congress passed the Education Act of 1969, which included provisions for gifted and talented children. The law required that the U.S. Commissioner of Education study the needs of gifted and talented children and make recommendations (Marland, 1972). Consequently, the Marland Report laid the foundation for the present 20-plus year period of growth in gifted education.

During the late 1970s and into the 1980s, virtually no federal funding was available for educating gifted students. To the extent that programs were developed, they were funded at the local and state levels. Subsequent financial support by the federal government has been penurious.

The Elementary and Secondary Education Act of 1965 was amended in 1988. This amendment authorized the Gifted and Talented Program in the U.S. Department of Education to provide financial assistance to state and local education entities, institutions of higher education, and other public and private agencies to help with the education of able youth. Under this amendment, titled the Jacob K. Javits Gifted and Talented Students Education Act, 41 grants and a five-year contract for a National Research Center have been funded as of this writing.

Because of level funding, no new grants were awarded in fiscal year 1991. No new funding was provided by a congress and an administration that supposedly had a "peace dividend" due to the end of the "cold war." The federal government's inattention to the nation's most valuable resources should have been a cause for extraordinary political action by all educators and citizens alike who understand the necessity of capital investment for human development.

Ohio's Support

Investment in gifted education by the state of Ohio has been sporadic. As of September 1991, about 12% of the elementary and secondary students in public schools in Ohio were identified as gifted and talented, approximately 221,000 students (Ohio Department of Education, 1991a). But because special programs are not mandated in Ohio, about 138,000 of these students are not receiving special instruction.

During the 1990-91 school year, the state funded special instruction for approximately 26,000 of the identified gifted and talented students, about 12% of those eligible for service. The remaining 57,000 students who received special instruction benefitted from their local school districts' ability to provide the instruction without state assistance. The lack of full support for the state's most able students could be a harbinger of Ohio's economic future.

Gifted Education in the Context of Educational Reform

Present criticisms of American public education evolve around two economic issues: (1) the ineffectiveness of the schools in producing competent workers (Congressional Office of Technology Assessment, 1988) and (2) the poor record of schools as the primary institution established to educate our young (Pearlman, 1989). Both sets of criticism are rooted in the American expectation that public education must serve the economic needs of the times. This expectation is not new to American education.

Expectations of Education in Serving Economic Needs

At the close of the 19th Century, the Carnegie Foundation's first president, Henry Smith Pritchett, was troubled by the emerging needs of the growing urban, industrial society. His concern led to the Carnegie Foundation's commitment to serve as the primary agency "to reform American

education so that it could more effectively prepare the scientifically trained experts that Pritchett thought were needed for social, political, and intellectual leadership" (Cremin, 1988, p. 499). Now, in the twilight of the 20th Century, a multitude of reports are directed at education's role in addressing our nation's present economic needs. In such times, the best and the brightest students should be viewed as treasures for the economic well-being of our society.

Social and Education Values

Public education is embedded in a social context that determines *what* is valued, *who* is taught, and *how* they are taught. In this sense, the social values of the overall culture dictate *who* will receive *what* types of education. These values and target groups emerge through our democratic process and eventually are reflected in legislation.

Observers of the present American culture differ in their criticism, not only in terms of what is valued but also in terms of how the values emerge. Bloom (1987) faulted the schools, in particular higher education, as the primary source of the decline of thinking. Postman (1985) cited the American culture's overwhelming interest in entertainment as the driving force behind the superficiality of our thinking. He reminded readers that Aldous Huxley prophesied in *Brave New World* that, in the future, there would be no reason to ban books because there would be few who would want to read.

Others ascribed our decline to the kinds of leaders who are selected. Garry Wills (1987), in explaining the Reagan era, showed how President Ronald Reagan reflected the American dream and, in so doing, reconciled America with itself. He showed how Reagan presented failure along with low expectations as great achievements because the Reagan years emphasized image at the expense of achievement.

Within a cultural and social context, certain achievements are valued more than others. In education, targeted values are translated into aptitude and achievement scores. Targeted values also largely determine the types of school interventions that are considered desirable. Societal values frame both the research questions and the research findings. Kuhn (1970) used scientific language to explain this phenomenon; paradigms are created and discarded as values shift. Research, both in the hard sciences and in the social sciences, is rooted in paradigms that are valued more than are other conceptual models. Gifted education is not different in this respect; the phenomena that are studied and their research findings are influenced by the pressures of the times.

Ohio's Gifted Education Strategic Plan

In March 1990, Ohio's superintendent of public instruction assigned a task force to develop a strategic plan for gifted education in the 21st Century. The task force, a broadly representative group comprised of practitioners and parents, published its results one year later (Ohio Department of Education, 1991b). In the six meetings of the task force held between March 1990 and January 1991, four pertinent questions were addressed:

- Who should receive gifted education?
- What should be the content and expected outcomes of education for gifted students?
- Where should gifted education be delivered?
- How should the effectiveness of gifted education be measured? (Ohio Department of Education, 1991b, p. 4)

The task force also created a mission statement, belief statements, and five goal statements. A set of strategies was developed for achieving each goal. The report is a major achievement for the Ohio Department of Education and could represent a strong foundation for future gifted programs in Ohio. The report presents a process for achieving the mission:

> *The mission of education for gifted students is to prepare each of them to be a contributing member of society by providing appropriate programs and services designed to develop and maximize their unique abilities and enhance personal growth* (Ohio Department of Education, 1991b, p. 5).

The Future: Gifted Education in Ohio

The student population that should be served is diverse, and the potential pool of gifted students in Ohio is large. Approximately 12% of the public school students in the state have been identified as gifted (Ohio Department of Education, 1991a). This figure reflects the presently broad definition of giftedness. It probably does not include others who are gifted and who are not now being served. A broad spectrum of instructional interventions are needed. The diversity of the state's population — rural, suburban, and urban — demands appropriate program options from preschool to adulthood, from home to the workplace.

Typically, schools tend to provide programs for high-achieving gifted students who conform to expected age-grade standards of behavior and who do not question the status quo. But there are many gifted students who are not high achievers, who are uneven in their academic interests and achievements, and whose talents are highly specialized. Frequently, these students are underserved in the standard gifted education programs.

What actions are needed to achieve the mission set forth in Ohio's strategic plan for gifted education? Already in place are many comprehensive programs ranging from part-time placement to full-time placement in magnet schools. Ohio schools are continuing to address additional needs, to refine curriculum, to involve parents, and to consider the entire range of needs for gifted and talented students. What follows are suggestions for some necessary changes needed in Ohio to better serve its gifted students. Some of the changes would require the legal foundation and impetus of state legislation.

Improved public education is the result of enlightened policy changes by legislative action. Some basic changes could do much to improve public education in Ohio and would, as a result, quickly improve the educational opportunities for our gifted and talented children. The selected areas addressed below have not been fully developed but, once complete, would enhance the present education of gifted students. These suggested changes pertain to alterations in the size of existing school districts in Ohio, to the development of comprehensive programs for underserved gifted students, and to increased use of grade and subject matter acceleration.

Reorganization of School Districts

School district reorganization in Ohio, which can be mandated by legislation, can lead to expanded opportunities for gifted students. The creation of metropolitan school districts would spread the tax base across suburban and urban districts. Larger pools of students would be in one school district, thus enabling metropolitan districts to have better and more complete educational programs for all students, including able students. The consolidation, through clustering, of all of the remaining rural school districts in Ohio could eliminate hundreds of the present

district boundaries. Consolidation of rural districts would have the same effect as the creation of metropolitan school districts.

Legislation also could facilitate expanded opportunities for gifted students at the postsecondary level. The sharing of programs and resources of public schools with public postsecondary institutions could result in an increase in the number of Ohio students who are enrolled in postsecondary courses while still in high school and could open up the postsecondary facilities as year-round academies for the most able students. Ohio needs a single public education system that extends through graduate school, one system that removes artificial barriers that prevent the brightest youngsters from progressing at their *own* learning rates. Students should be able to access programs across the entire system as needed.

Underserved Gifted Students

Many gifted students are not now being served in existing programs because few programs are geared to the needs of underachieving children, to culturally different students, and to gifted females. Students from these populations represent an increasing proportion of potentially gifted students. Special programs that address the nature and needs of these special target groups, more and better trained personnel to work with these students, and resources to foster the development of their interests and their strengths are needed to adequately serve all gifted students.

Acceleration

Acceleration, in its various forms, has been associated with gifted education from its inception. It is rooted in the belief that the single most distinguishing characteristic of gifted students is their rapid rate of learning. Four options for acceleration are commonly used in gifted education: (1) early admission to school, (2) compacting a given number of years into a fewer number, (3) subject matter acceleration, and (4) admission to college with advanced standing (Fox, 1979).

In 1967, Ohio required public schools to offer early admission to kindergarten and first grade for those children who met the eligibility requirements. Early admission to school is one of the most efficient ways to accelerate bright children, but it is underused. The reason for its underuse is apparent; most parents are unaware of the provision because school personnel tend not to publicize this option.

Southern, Jones, and Fiscus (1989) surveyed over 500 school practitioners, coordinators of gifted education, school psychologists, building principals, and teachers. Respondents to the survey generally expressed conservative views toward the value of early school admission and acceleration. Despite compelling research evidence, they viewed the process of acceleration as potentially hazardous. Because beliefs are not easily changed (Neisser, 1976), a major public information effort on the part of advocates will probably be needed to inform parents of the benefits of the early admission option. It is unfortunate that school personnel, even those in gifted education, remain committed to the status quo when overwhelming evidence favors acceleration for selected students.

Other Acceleration Options

Advanced standing in college has been achieved through advanced placement tests and through concurrent enrollment of high school students in college courses. Concurrent enrollment requires the physical proximity of colleges and high schools and a coordinated effort with special attention to the social needs of the high school students (Wolf & Geiger, 1986). Figure 2 shows the types of acceleration and studies supporting their use.

Figure 2
Studies and Reviews on Acceleration

Options	Authors
General	Terman & Oden, 1959
Early Admission to School	Reynolds, Birch, & Tuseth, 1962 Braga, 1971
Math Acceleration	Stanley, Keating, & Fox, 1974
Grade Skipping	Solano & George, 1976 Brody & Benbrow, 1987 Fox, 1979 Kulik & Kulik, 1984
Early Admission to College	Keys, 1938 Pressey, 1949 Brody, Lupkowski, & Stanley, 1988
Concurrent Enrollment High School/College	Wolf & Geiger, 1986

Research Findings On Acceleration

Although acceleration has not received widespread acceptance in education, research findings support many benefits for the students. Some authorities attribute the resistance to acceleration by professionals and parents to the unfounded fears that accelerated programs create (Callahan, 1981). A misplaced emphasis on socialization is a powerful influence in discouraging students and their families from opting for accelerated programs.

Schools lose funds, as well as talent, by moving students rapidly through school systems. Thus, there is a financial disincentive to schools for accelerating students through the grades.

Over 40 years ago, Sidney Pressey (1949), a prominent Ohio State University researcher, provided a research base for accelerating gifted students. His series of studies clearly pointed to the societal value for nurturing giftedness, finding able students early and providing them with accelerated educational programs. Pressey's early work served as the foundation for the more current work of Stanley and his associates (1974). It is past time for educators to put this research evidence into practice.

Lehman's (1953) classic studies of age and achievement showed the early peaks by mathematicians (average age 34), chemists (average age 34), and physicists (average age 36). In other studies, Lehman (1946, 1947) showed the importance for scientists and leaders to start their careers at early ages. These studies speak to the need today for more scientists and ways that able students can be encouraged to become scientists.

Policy Initiatives for Nurturing Ability

Figure 3 summarizes some of the needed changes in Ohio's public education system in order to better meet the state's gifted population.

Findings in behavioral genetics and family systems research suggest that *both* individual heredity and family environments are significant factors in nurturing aptitudes and sustaining high achievement. Bloom (1985) studied world class pianists, sculptors, swimmers, tennis players, research mathematicians, and research neurologists. In interviews with these people, he and his colleagues found compelling evidence of the importance of the home environment on the development of talent. The families of these achievers shared a number of characteristics: hardworking parents, an emphasis on always doing one's best, a belief that all family members must be productive in the use of time and in establishing priorities, and a heavy emphasis on self-discipline.

Recent studies, coupled with what we know about the effects of early childhood education on the later achievement of normal and subnormal children, point to the need to emphasize early education for able children and adequate resources for schools to work with families.

Capron and Duyme (1989) found that children adopted by parents with high socioeconomic status have higher IQs than do children adopted by parents with low socioeconomic status. Their research suggests the great influence that environment has on measured intelligence. Plomin (1989)

Figure 3
Examples of Needed Changes in Gifted Education in Ohio

Educational Programs	Increase quality education for all students. Increase the numbers of students who are eligible for grade acceleration. Provide special options for all gifted and talented students. Provide early education for gifted and talented students. Provide state funding for year-long schooling.
Legislation	Create metropolitan school districts. Combine hundreds of rural districts. Place public schools and postsecondary public programs under a single state authority. Provide funds for advanced placement courses and tests. Fund transportation costs for qualified students to access optional educational programs.
Personnel Preparation	Emphasize the research evidence that supports the benefits of grade and subject acceleration for qualified students. Make all forms of acceleration quality indicators of "good schools." Expose all general educators to program needs for gifted and talented students.
Public Awareness	Deemphasize the entertainment culture. Publicize academic and artistic achievements. Require schools to involve parents and students in educational placement decisions throughout the students' school careers. Encourage employers to provide release time for parents to meet and work with teachers. Open schools to parents and students during evenings and weekends.
Testing and Identification	Identify and provide special instruction for all gifted and talented students. Include in this population all underserved gifted students: underachieving, female, culturally different, and handicapped gifted.

demonstrated the importance of looking at family environmental differences. Angoff (1988) noted that many inherited characteristics can be changed and, conversely, many environmentally acquired characteristics are very resistant to change.

McGue (1989) discussed the relevance of Capron and Duyme's findings. He noted that while they provide "unequivocal evidence for the existence of an environmental influence, they do not identify the mechanism of that influence" (p. 507). Thus, more research on familial influence is urgently needed.

Program Options

With larger metropolitan school districts, year-round programs should be available for those students who want to accelerate and enrich their educational experiences. Concurrent enrollment, where students can enroll in both high school and in postsecondary programs, should be increased.

Ohio presently provides two options for high school students who wish to enroll in postsecondary programs. The first option permits eligible students to enroll in college courses for college credit. These students are required to pay all costs. The second option permits eligible students to enroll in college courses at their high schools for both college and high school graduation credit. Under this option, students do not pay for tuition or books (Ohio Department of Education, 1991c.) With a single education authority in the state, barriers that prevent students from participating in these options could be removed.

Advanced placement courses have been available for over 30 years for students who wish to take college level courses in their high schools. But many high schools in Ohio do not offer these courses because of the small number of qualified students and qualified teachers. Another barrier to advanced placement credit is the cost of the tests. State funding for these tests would be an inexpensive investment with great potential gains.

With the inclusion of postsecondary programs into one state system, a wide range of rich instruction becomes possible. The sciences, foreign language, the performing arts, and other forms of enriched instruction would be readily available to all qualified students. While these opportunities now exist, they are limited to those schools that have both the inclination and resources. They tend to occur in the more affluent school districts populated by better informed parents. These are the same parents who are more likely to seek enriched experiences for their children by accessing community resources as well.

Concurrent enrollment and grade acceleration are examples of changes needed in the present Ohio system. Such changes would enhance service for gifted students. There are already many options available for gifted students, but more options are needed to fully address the needs of both the students and the state in preparing for the future.

Conclusion

The opportunity and the challenge exist to shape the future for Ohio's gifted and talented students. Their future is dependent, in large part, on what we are willing and able to do now. In the face of economic challenges never seen before, more resources — time, finances, and personnel — must be invested in nurturing Ohio's gifted and talented students early in their lives. This can be done by restructuring the public education system, removing the barriers to educational options, raising the quality of instruction and programs, and involving parents and students in educational decisions.

The technology and the understanding to make these necessary changes are in place, but the commitment to change education for all gifted and talented children is needed. Today's actions represent the shadow of gifted education for tomorrow.

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